

November 19, 2008

Clare Laufenberg Gallardo
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: SMUD COMMENTS ON RETI PHASE 1B DRAFT REPORT

Dear Clare:

The RETI Phase 1 work is a very good effort that is improving the state of the art in transmission planning for renewable energy supply growth in the new energy policy environment of reducing carbon dioxide emissions. Black & Veatch, the Environmental Working Group, and the CEERT facilitators all deserve significant credit for this important work on a very complex topic. The amount of data evaluated and the new methodologies developed in the RETI process are impressive and deserve recognition. However, the complexity of the work to evaluate a wide range of distributed renewable energy zones in and around California and to serve future electricity loads throughout the State of California, make this job too difficult to be completed satisfactorily in the short time allowed to date.

The RETI Phase 1B draft report concludes that the lowest economic and environmental cost renewable energy zones for new transmission in California are all located in Southern California (i.e., Tehachapi South). While SMUD staff agrees that there are significant and high quality wind, geothermal and solar resources in southern California, we disagree with these RETI conclusions for California overall because of a variety of reasons including factors not included adequately in the RETI study (see below).

Two comments are provided below on the draft Phase 1B study. Comment 1 regarding the overall report recommendations, was discussed extensively at the November 14, 2008 Stakeholder Steering Committee meeting in Sacramento. Comment 2 has been discussed with Black and Veatch and with representatives of the Environmental Working Group. Based on these discussions, we expect both of these comments to be satisfactorily addressed in the draft final Phase 1B report scheduled to be released on December 4, 2008 and considered for approval on December 17, 2008.

**SMUD**SACRAMENTO MUNICIPAL UTILITY DISTRICT
The Power To Do More.™

P.O. Box 15830, Sacramento, CA 95852-1830; 1-888-742-SMUD (7683)

RETI, page 2

1. Overall Report Comment - Based on both cost and environmental reasons, the RETI Phase 1B report needs to recommend a wide range of transmissions options, including access to new Northern California renewable energy zones, at least until further study and evaluations are completed.

There are many reasons why RETI needs to support in the Phase 1B report a wide range of transmission options to access diverse renewable energy supplies for California, including support for new Northern California transmission. Some of the reasons why Northern California renewable energy supplies need to be added to California's supply mix by 2020 are listed below.

- 1) The RETI Phase 1B analyses only included the cost of transmission upgrades to the nearest load center. Thus, delivery to the Los Angeles load center was assumed for all of the highest ranked CREZs in the report. However, the Northern California load centers of San Francisco, Santa Clara, Palo Alto, Sacramento, Roseville, Stockton, Modesto, Turlock, Fresno, Redding, etc. also will need to be served by reliable renewable energy supplies out to 2020 and beyond with a 33% renewable energy supply mandate. Since the RETI analysis did not include the economic and environmental cost of transmission upgrades from South to North, evaluating these costs and adding them to the cost of CREZs located in Southern California is critically important to decisions on where to build transmission to supply renewable energy for California. We expect that adding these costs to the RETI cost curves likely will substantially improve the competitiveness of N. CA CREZ development.
- 2) Diverse renewable energy supplies need to be provided for California to maintain a high level of reliability in meeting electricity loads. Single transmission pathways of large amounts of future renewable energy supplies, such as through Paths 15 and 26, may result in Northern California supplies that would be highly vulnerable to disruption from natural (e.g., earthquakes, storms) and human disasters.
- 3) The RETI Phase 1B analyses did not thoroughly consider the benefits of transmission upgrades in California to access out of state renewable energy resources, including from the Northwest where biomass and geothermal resources are plentiful and Northern and Central Nevada where there are large geothermal resources. As a more extreme example of accessing future renewable energy supplies, PacifiCorp's Gateway transmission project will access the large Class 5 quality wind resources in Wyoming and is planned to provide delivery to Southern Oregon near the California/Oregon border by 2014. Access to these resources via new in-state transmission may provide significant renewable resources and benefits to California.

**SMUD**SACRAMENTO MUNICIPAL UTILITY DISTRICT
The Power To Do More.SM*P.O. Box 15830, Sacramento, CA 95852-1830; 1-888-742-SMUD (7683)*

RETI, page 3

- 4) The Phase 1B analysis did not include the costs of integrating large amounts of wind and solar into the California electricity supply system. N. California has low cost and much larger hydroelectric resources than S. CA. These N. CA hydro resources can be used to integrate variable renewable resource generation into the grid much more cheaply and with much less carbon emissions than from S. CA fossil combustion turbines. There also are large pumped storage hydro projects in the planning stages in Northern California to help manage large intermittent renewable energy supplies, including SMUD's proposed 400 MW Iowa Hill project.
- 5) The Uncertainty Analysis in the Phase 1B report indicates that most of the 29 CREZ's evaluated could be cost-competitive depending on whether capital costs and capacity factors vary from 10% to 20% from the base case. Further, the sensitivity analysis in the Phase 1B report assumed that the production tax credits are eliminated for wind, biomass and geothermal, and the 30% investment tax are eliminated for solar projects. The results of this sensitivity analysis show that the cost-effectiveness of solar energy is more severely impacted than other renewable energy resources. Wind and out of state biomass and geothermal resources would likely replace the solar generation if tax incentives are eliminated for renewables before new transmission is built to access these solar resources. The sensitivity analysis shows that several new Northern California CREZs become economically viable to supply the RETI net short energy by 2020 if federal tax incentives end, including Lassen South, Lassen North, Round Mountain and Santa Barbara.

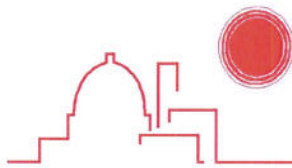
2. CREZ-Specific Comments:

1) The Lassen North-A subCREZ was incorrectly drawn to include a wind project in Modoc County located in an environmental black-out zone.

- The SSC earlier decided not to locate renewable energy projects in environmental black-out areas, so the Modoc County project should be eliminated. In addition, the Modoc renewable energy area is a long distance from the renewable energy projects in central Lassen County so, if it is decided that the project should remain in the report, it probably should be included as a separate Modoc CREZ.

2) Five wind projects in central Lassen County have much larger renewable energy resources than estimated in the RETI Phase 1B report.

- The two projects to the west in central Lassen County, WI_203 (52 MW) and WI_121 (45 MW) are situated approximately where Invenergy holds a 93,919 acre BLM

**SMUD****SACRAMENTO MUNICIPAL UTILITY DISTRICT**
The Power To Do More.SM

P.O. Box 15830, Sacramento, CA 95852-1830; 1-888-742-SMUD (7683)

RETI, page 4

- ROW. SMUD also currently holds a 5,542 acre BLM ROW on lands adjacent to Invenergy's ROW on the east side but the RETI map doesn't show a project or a BLM ROW for SMUD. Together, Invenergy and SMUD estimate that nearly 500 MW of wind projects can be constructed on these two ROWs, compared to the 97 MW listed in the Phase 1B draft report.
- The three projects to the east in central Lassen County are WI_125 (81 MW), WI_124 (143 MW), and WI_123 (77 MW). We are currently surveying the wind developers (BP, Horizon) to get their estimates of MW of capacity and we will provide that information this week to Black and Veatch.

3) At least one new CREZ should be drawn in northern Lassen County that combines various combinations of the twelve projects shown on the wind project map.

- We suggest that the boundaries of the new CREZ(s) should be "shrink wrapped" tightly around the wind projects and these CREZs should then be scored both economically and environmentally. Among others, candidate CREZs should include:
 - WI_203, WI_121, WI_123, WI_124, WI_125
 - WI_126, WI_127, WI_128, WI_129, WI_116, WI_117

Please let me know if you have any questions regarding these comments. I can be reached at 916-732-6589.

Sincerely,

Michael DeAngelis
AR&DGT Program Manager

cc: Jim Shetler
Cliff Murley